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ABSTRACT

This research in the application and synthesis of psychological stage theory to drug abuse education was designed to promote growth in decision making capacity of 11- and 12-year-old children. Specifically, the purpose of this research was to intervene in this developmental period of transition from concrete to formal operational thinking capacity in order to facilitate readiness for, or movement to, the next stages of psychological development. It was hoped that such intervention would result in youth choosing to regulate their future drug use, avoiding drug abuse. The speech is divided into sections which focus on: (1) a discussion of stage theory in which there is a broad view of psychological stage development, (2) a concise review of the literature pertaining to preventative programs in drug abuse education, (3) a detailed description of the research design, and (4) a statement of hypotheses of expected research outcomes. Data collection began with pretesting in January 1975; posttesting is planned for June 1975, following which data analysis will take place. (Author/PC)

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Developmental Stage Theory and Drug Abuse Education*

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Introduction

This research in the application and synthesis of psychological stage theory to drug abuse education is designed to promote growth in decision making capacity of eleven and twelve year old children. In the conceptualization of this research decision making capacity is assumed to be synonomous with psychological stage development which represents an individual's internal mental structuring that determines the qualitative way he/she interacts with the environment. Specifically Kohlberg's (1969) model of moral development and Piaget's (1960) conceptualization of cognitive development provide the general theoretical basis for this research. Their models provide the basis for predicting that youth at higher stages of psychological development have achieved the capacity to make personal decisions to avoid drug abuse, while youth at lower stages of development may be less able to make decisions to avoid drug abuse. The latter may be described as having less complex internal mental structuring and consequent decision-making ability to make independent decisions. They are, therefore, potentially more responsive to group pressures and other external expectations that may lead to drug abuse.

The relationship between cognitive (i.e., the capacity to think about and act on problems) and decision making development is important, because achievement of higher stage cognitive functioning is assumed to be a necessary condition for corresponding growth in psychological development and related decision-making capacity. At the chronological age of the subjects in this study (eleven and twelve), children are completing the concrete-operational period of cognitive development and <u>may</u> be moving into the formal-operational stage in which their internal decision-making structure is enhanced by the development of logic and abstraction capacity. An intervention at this time aimed at stimulating psychological, moral-decision making development is

called for, because achievement of higher stage pyschological development and related decision-making capacity apparently requires formal operational thinking.

Specifically, the purpose of this research is to intervene in this developmental period of transition from concrete to formal operational thinking capacity in order to facilitate readiness for or the movement to the next stage(s) of psychological development. This should result in these youth choosing in the future to regulate drug use, avoiding drug abuse. The choosing, that is, the decision making process in this context would behaviorally indicate stage of psychological development with higher stage achievement predicting more autonomous decision making behavior and lower stage achievement predicting more consistent reaction to external expectations and control.

In sum the interventions described in this research are designed to promote readiness for--and actual--stage movement, because an individual who achieves a higher stage of psychological development achieves the capacity for greater reciprocity and sharing with others, knowledge of the impacts of his/her behavior on self and others, the ability to communicate and integrate complex information affecting his/her life, and the capacity to make independent decisions to help oneself and others in a reciprocal way.

In the sections that follow a theoretical discussion of stage theory is presented which gives a broad view of psychological stage development encompassing Kohlberg and Piaget as well as the work of Dabrowski, et al. (1970), Piechowski (1975), Loevinger and Wessler (1970), and Briskin (1974); a concise review of the literature pertaining to preventative programs in drug abuse education; a detailed description of the design of this research; and finally a statement of hypotheses of expected outcomes from this research. Data collection from the current subject pool began with pretesting in January, 1975 and will be completed with posttesting procedures in June, 1975. Data analysis will take place in the summer, 1975.

Theoretical Discussion of Stage Theory

The common ground among those stage theorists listed above is an understanding of psychological development as 1) a process proceeding sequentially through an invariant set of stages, 2) involving the reorganization of an individual's internal mental structure, and 3) resulting in higher level functioning and adequacy to interact more reciprocally with the environments encountered in life. They see the environment providing stimulus conditions that may facilitate growth through the stages, inadvertently maintain present stage functioning, or stifle and directly impede psychological growth. The key concept in the material that follows is that psychological development is not an automatic process.

Concept of Stage

Stage behavior indicates qualitative modes of thinking, seeing, feeling, hearing, problem solving, and decision making. There is a qualitative difference in these schematas of action at a higher stage than at a lower stage. The difference represents an increased adequacy and perceived need to interact reciprocally with one's environment.

The different modes or schemata of thought and action form an invariant sequence or succession in individual development. The process of achievement of higher stage functioning involves the disintegration, transformation and restructuring of lower stage internal mental structures resulting in their integration into higher stage structure and capacity to operate more adequately but not necessarily consistently at that higher stage. In other words, lower stage behaviors are not simply erased as they are integrated into higher stage structures. These behavioral repertoires are available, but perceived by the individual as less adequate for effective and satisfying

interactive experience. In the process of psychological development cultural factors may speed up, slow down, or stop this disintegration, transformation and restructuring process but they do not change the stage sequence or the universal aspects of stage behavior which are common to generic man.

The aspect of higher stage achievement coupled with continued availability of lower stage capacity is most significant in stage theory. While Piaget may be credited with the conceptual content of the material so far presented, Dabrowski and Piechowski have contributed the concept of "multilevelness of behavior", that is, a person's capacity to operate at a higher level of psychological development while lower level behavior continues to manifest itself. Higher level functioning is preferred based on the adequacy of the interaction it affords, while lower level behavior may be often seen because the disintegration and restructuring process taking place at the lower stage is not complete.

To understand multilevelness the concept of stage must again be presented. A stage indicates an actual organization of internal mental structure that is qualitatively different from the organizational structure of other stages. In the hierarchy of stage succession, conflict inevitably arises when the individual perceives his capacity to operate at a higher level but continues at times to function at a lower level.

Developing Readiness for Self-Awareness

From the genesis of his life a child is certainly aware of himself and his environment, but he does not have the internal mental structure of self-awareness, that is, the capacity for a heightened sensitivity to his own uniqueness as a separate, developing, and finite human being. This capacity for standing back from the interactive experience of self and environment as it is occuring may develop during adolescence, early, middle or late adulthood. It may not develop at all (Briskin, 1972).

Before achieving self-awareness, a person is consistently reactive to the strongest stimuli in his environment. In most instances this means consistent responsiveness to environmental forces of control. If the preadolescent cannot develop the structures to achieve self-awareness possibly because of the absence of formal operational capacity, and many adolescents and adults have not achieved this level of development, what psychological process is taking place in the pre-self-awareness period of life? What is occuring is a dynamic process of self-environment interaction in which the environment is the stronger factor and therefore may facilitate the development of internal mental structures pointing toward eventual readiness for self-awareness, or it may impede and stifle the readiness process. (See Briskin 1972) The complexity of what constitutes a facilitative interaction or a stifling one is apparent. Here we will focus on concepts in the facilitative process.

Preferred Modes of Interaction

Before achievement of self-awareness the individual is consistently reactive to environmental stimuli. Let us assign the environment the term "second factor" of development. After achievement of self-awareness the individual realizes his capacity to negotiate and reciprocally interact with "second factor." The individual's capacity for self-aware, autonomous, reciprocal functioning is the "third factor" of development.

The "first factor" of development is the individual's preferred modes of experiencing his many environments. Dabrowski et al. (1970), Piechowski (1975) and Briskin (1974) observed that children, adolescents, and adults consistently overreact to external and internal stimuli. These responses are positive, consistent; and the stimuli which elicit the behaviors are sought out by the individual. Dabrowski called this consistent tendency to overreact "overexcitability" and differentiated five forms: psychomotor, sensual, intellectual,

imaginational, and emotional. Piechowski states that the characteristic aspect of overexcitability is that a wide range of stimuli is converted by the individual to his preferred modes of interaction. Thus a number of individuals interacting with a common set of stimuli may choose to use those stimuli according to their respective "profile of excitabilities." One person may be high intellectual, psychomotor and moderate to low excitable in the emotional, imaginational, and sensual modes. Another may be high emotional, imaginational and intellectually excitable and moderate to low in the sensual and psychomotor modes and so on.

Piechowski (1975) and Briskin (1975) have established operational definitions for the 5 excitability modes. In general when the individual interacts with the environment, he responds to specific stimuli with exaggerated excitement and/or quiet intense concentration, persistence, patience, consistency, and noticeable enjoyment expressed both verbally and non-verbally. Specifically, high emotional excitability is seen when the individual consistently shows a sensitivity and need for experiences that provide opportunities to establish empathic relationships with other children, adults, animals, and plants. The person quickly shows concern for the emotional predicaments of others and then often acts to help them. High psychomotor excitability is seen when the individual consistently shows a sensitivity and need for experiences that provide opportunities for physical movement and action whether trivial or well planned. The person seeks out physical modes of expression and clearly shows delight and excitement in using his body. High sensual excitability is seen when the individual consistently shows a sensitivity and need to interact with people and objects that are encountered through the senses of touch, smell, hearing, sight, and taste. The interaction and response indicates exaggerated pleasure or displeasure. High imaginational excitability is seen when the individual

consistently shows a sensitivity toward and a need for experiences that provide opportunities for fantasy, creating new images, and refashioning fresh ideas out of previous experiences. The person is full of plans, dreams, newly formed opinions, thoughts and schemes. The person clearly shows satisfaction and excitement in creating and discovering new ways of expression and of doing things. High intellectual excitability is seen when the individual consistently shows a willingness and need 1) to analyze and synthesize parts in relation to the whole object, problem, or situation; 2) to break problems down in order to understand how the "issue" can be better understood; 3) to relate parts to the whole in a literal, prescribed way; 4) to secure logical answers and solutions to questions and problems; 5) to make order out of apparent disorder. The person, in sum, seeks to systematically understand the world.

In sum, each form of excitability is a mode of experiencing and functioning in the world. The imaginational mode is one of dreams, images, creative plans, and strong visualization of direct or vicarious experience. The intellectual mode is one of analysis, questioning, and synthesis. The psychomotor mode is one of movement and need for action whether trivial or well planned. The sensual mode is one of interaction through sensory inputs of pleasure or displeasure. The emotional mode is one of relationships with others, of reaching out empathically in a sensitive manner to other adults, children. animals and plants. Observation of individuals indicates they have all five excitabilities but in different strength profiles. One person may be high psychomotor, intellectual, and sensual and moderate to low strength in emotional and imaginational. Another person may be high strength in the imaginational and emotional modes and moderate to low in psychomotor, intellectual and sensual and so on.

The excitability model indicating the 1st factor of development may be further clarified by viewing preferred modes of interaction as the individual's preferred ways of seeking competence. In a survey of the motivation literature from 1900 to 1959, Robert W. White (1959) developed a convincing logical and empirical case for considering many facets of human behavior as indicating the individual's biological need for activity leading to self-competence.

Excluding hunger, sex, aggression, and fear, White is referring to the familiar series of behaviors which start with sucking, grasping, and visual exploration and continue with crawling and walking, acts of focal attention and perception, memory, thinking, anticipation, exploring of novel places and objects, effecting stimulus changes in the environment, and manipulating and exploiting the surroundings. White proposed that these behaviors, all of which have to do with effective interaction with the environment, be considered under the general heading of competence, i.e., the capacity for effective interactions with the environment.

White states that the urge toward competence is neurogenic in origin and is inferred specifically from observable behavior. Competence seeking behavior consists of exploration, experimentation, and variation. When competence seeking activity and competence motivation is stimulated

> ...it is characteristic of this particular sort of activity that it is selective, directed, and persistent, and that instrumental acts will be learned for the sole reward of engaging in it. (p. 323)

Thus White's thesis is that many behaviors have a common biological significance, that is, they form part of the process whereby the individual seeks to interact effectively with his environment. The common property, called competence, represents the urge for mastery in a person's interaction with the environment. Interactive activities show direction, selectivity, and persistence.

Such activities are in the service of competence, which is assumed to be the motivational basis of most behavior.

White further proposed that competence be considered from two perspectives: competence motivation, that is the urge for activity, and competence in its more familiar usage, that of a sense of competence and a feeling of efficacy. In the context of the development of decision making capacity, the urge or need for activity for its own sake, i.e., competence motivation, is logically seen as the general descriptor of the process for expression of an individual's heightened imaginational, intellectual, emotional, sensual, and psychomotor excitabilities. Further, a person's preferred modes of functioning using his excitabilities are seen as the specific ways in which he 1) expresses his urge for activity and mastery, and 2) achieves a sense of competence as a result of exploration, experimentation and manipulation of his environment. The person who interacts with an environment sensitive to his competence needs, enjoys a high probability of achieving competence and skill and, most important for stage development considerations, a positive sense of himself as a competent human being. "A positive sense of self-competence" is considered to be the primary condition for establishing "readiness" for self-awareness and subsequent movement to higher stages of psychological development.

Description of Stage Development

Self-awareness is not a part of the internal mental structure of lower stage functioning. At these levels the developmental process involves interaction of an individual and his environment, that is, a 1st-2nd factor interaction. Self-awareness, the 3rd factor of development is part of the behavioral capacity of individuals who have achieved higher stage functioning. The stage models of Kohlberg in moral development, Loevinger in ego development, Dabrowski and Piechowski in emotional development and Briskin in

self-awareness development have been synthesized to present the following descriptions of stage development. A six stage model of self-awareness follows in which the central theme is the qualitative growth in the individual's capacity to interact with his environment in a reciprocal manner and to exercise interdependent decision making. The need to be reciprocal increases as a behavioral imperative with each succeeding stage.

At stage 0 development is limited to the biological factors of development. The individual does not have the capacity to recognize the interactive nature of life and for all intent and purposes the environment does not exist except as a vehicle for self satisfaction. A person at stage 0 seeks out opportunities to satisfy his needs for excitability and competence but without knowledge of environmental influence or impact. There is no reciprocity between self and environment at stage 0.

At stage 1 the individual has achieved the capacity to recognize the existence of his environments. This shows the first developmental instance of reciprocity. However, person-environment interactions are limited by the individual's perception of interactions as being obedience and/or punishment oriented. In other words self and others are seen as possessing behavioral repertoires consisting solely of authority, obedience, and punishment actions. When the individual perceives himself in an inferior position, he will expect to simply obey and/or be punished. When he perceives himself in a superior position, he will use authority, obedience, and punishment behaviors in similar fashion. If stage 1 process does not prove effective, stage 0 behavior is still available in the person's repertoire.

At stage 2 there is a further development of reciprocal capacity. Here the individual begins to recognize the self-serving needs of others but even more apparent he knows his own needs and is committed to satisfying them. He is willing to "bargin" with others giving them what they need in order to

assure their cooperation in satisfying his own. The stage 2 individual perceives that a "what's in it for me" philosophy is totally legitimate. He is willing to give a little to another in order to get a lot for himself. He will never give away more or even an equal amount and take less. As soon as another person or situation no longer satisfies the imperative "there's more in it for me than you" the person drops the relationship and/or leaves the situation. If stage 2 process does not prove effective, stage 1 and 0 behaviors are still available in the person's repertoire.

At stage 3 capacity for reciprocal relations with others continues to develop. However, the focus at this level of reciprocal interaction is on membership in primary groups, especially the family and/or peer groups. A truly exceptional developmental capacity has been achieved at stage 3- that of the need, willingness, and capacity for submitting to the expectations and needs of the primary group. Here the psychological imperative is not "what's in it for me" but rather "what's in it for us." The qualitative differences in stage behavior are more clearly seen in stage 3 functioning than at any of the three previous stages described. The developmental importance of achieving the capacity for loyalty to the primary group should not be underestimated. The ability to submit to group rules at this stage is a necessary condition for further development, and specifically the achievement of self-awareness. The key descriptor of stage 3 functioning is the individual's capacity and willingness to respond consistently and loyally to group expectations. What is the reciprocal action by the group that could command such loyalty and submission? It is the most powerful reinforcement known to man--"inclusion." For submission to the norms of the group, an individual may expect to be included, supported, and protected. But note that reciprocity is not equality at stage 3. The group, representing a part of the person's environment, maintains a more powerful position. The individual remains submissive to group expectations and will

strive unhesitantly to prove he is a "good boy" or "good girl" and worthy of group praise. The individual at stage 3 has no part in the establishment of group expectations and rules. They have already been established before "membership is offered." The price for inclusion is consistent good boy behavior. The individual perceives the necessity for maintaining the group's respect and praise without question. The stage 3 person does not have the developmental capacity to question his submission to group rules. He perceives this is the natural way one interacts with the environment. If stage 3 process does not prove effective, stage 2, 1 and 0 behaviors are still available in the person's repertoire.

Stage 4 functioning is a derivation of stage 3 structure but with the added dimension of capacity to submit and be loyal without question to secondary as well as the primary groups of stage 3 functioning. Stage 4 behavior includes loyalty to institutions, such as, the system of law and order, the church, the community, and the nation. Again the group's power is in its capacity to offer the individual inclusion. In return the person accepts the pre-established rules expectations and procedures without protest or question. It's the natural way to assure that one's primary and secondary groups maintain their stability and capacity for support of their members. If stage 4/3 process does not prove effective, stage 2, 1, and 0 behaviors are still available in the person's repertoire.

In the transition from stage 3/4 functioning to stage 5 capacity we have the most significant developmental achievement in this invariant process so far. It is the achievement of self-awareness. At stage 5, reciprocity becomes a psychological imperative not from the behavioral viewpoint of a willing submission to group rules and norms but rather from the position of capacity and need to negotiate with group members for operational rules and norms,

a willingness to argue, debate, and fight for what the individual thinks and feels is best for the group, and a capacity to establish social contracts with others to carry out consensually arrived at rules, norms, and procedures whether applying to dyadic relationships between two people, between groups of people, between an individual and his primary and secondary groups and so on. The important change to note is loyalty to others remains a psychological imperative but in contrast to the powerful inclusion reinforcement of stage 3 and 4 functioning, the reinforcement for stage 5 behavior is the individual's self-aware, autonomous negotiations for social interactive procedures resulting in his commitment to support the formal and informal social contracts and agreements established.

Stage 5 functioning requires further explanation. A stage 5 person no longer finds it adequate to submit to group expectations for reasons of inclusion. However, he may choose to assume the role of the good boy in primary and secondary group interactions, because the members of those groupings do not qualitatively hear, see, or understand the reciprocity requirements of stage 5 functioning. A higher stage person can qualitatively hear, see and understand the behaviors indicative of previous stage behavior, because by definition lower stage structure is integrated into the structure of higher stages. The reverse is not possible. That is, a person at a lower stage cannot qualitatively hear, see, or understand the behavior of higher stage functioning. The stage 5 individual prefers to operate with persons and groups who are functioning at stage 5 as well, but it is the mark of a stage 5 person to accept responsibility for interacting with other individuals and groups at the highest stage at which they are capable of functioning. This is a psychological requirement, because a person prefers to operate at this highest stage. However interactions experienced by one individual which are initiated

by another who is at a higher (or lower) stage than he and in which the communication is presented by the latter at lower than the preferred stage may be interpreted by the recipient as a "developmental insult". Attention to this behavioral and psychological imperative potentially assures maximum communication and understanding.

If a person is operating consistently at stage 5, he will clearly understand that social contracts between himself and other stage 5 individuals and groups will be reciprocal with the "scales balanced." But in interacting with individuals and groups at lower stages he will understand that social contracts established in these instances will always favor the lower stage person who "expects" to maintain the advantage in all interactive situations.

Triggering Self-Awareness

Self-awareness is a structure indicating capacity for stage 5 functioning, and may be triggered by any one, several, or series of stimulus events occuring over a relatively short or long term period of time. Such events may range from the seemingly simple to the very complex. They may include physical maturation in adolescence or aging in adulthood with the accompanying psychological changes, a penetrating confrontive or casual remark by a loved or respected peer or adult model, the death of a significant friend, family member or public person, traumatic uprooting from one's home, job, or school, a sudden or prolonged illness, an outstanding personal success, a perceived threat to one's own life or to that of others, and so on. The events whatever their nature are unique to the individual who is ready to qualitatively experience the triggering event(s). This in turn indicates he has achieved the capacity to function at stage 5. The dynamics of the readiness process are a separate topic and are discussed elsewhere (see Briskin, 1974).

An individual who has achieved 3rd factor self-awareness realizes a new capacity for mediating the interaction between self and environment. He now begins to reevaluate past experience and evaluate current interactions but with a stage 5 functional capacity. It is a capacity that may produce a spectrum of feelings including astonishment, joy, inferiority, anxiety, and even denial, anger, rage, and depression. After all, the individual realizes he has the ability to negotiate for the meaning, rules, and norms in his life, and in addition he has the responsibility to initiate this process.

Behavioral Patterns Indicating Achievement of Self-Awareness

An individual whose reevaluation and evaluation of past and present experiences result in predominantly positive feelings of self-competence will consistently act interdependently and autonomously in the on-going process of self-definition. This indicates an integration and consolidation of behavior at stage 5. However, if the results of the reevaluation and evaluation process are inconclusive or negative indicating incomplete disintegration of stage 4, 3, and possibly 2, and 1 behavior structure, the individual will act in an inconsistent, compensatory, and ambivalent manner sometimes showing stage 5 capacity, but often acting at stage 3/4, 2 or even 1. But the stage 5 individual knows when he is reacting at a lower stage and if these actions are not by choice, he will experience multilevel conflict, that is, the internal tension produced by self-knowledge of his highest achieved stage capacity in opposition to his acting at a lower stage. For example, a multilevel conflict often observed and experienced involves the newly self-aware person facing a stage 5:3 situation in which well learned and reinforced responsiveness to external expectations inherent in stage 3 behavior is in opposition to the higher level psychological imperative to use his reciprocal capacity at stage 5.

The individual who is not ready for the achievement of self-awareness and the transition to stage 5 continues a behavior pattern recognizable by consistency in reaction to the strongest stimuli in his life system. At stage 4 these external stimuli come from secondary group expectations, at stage 3 from primary group norms, at stage 2 from a perception of external rules demanding constant bargaining in material and social contracting giving little, taking and expecting much, and at stage 1 from a view of the environment as authoritarian and/or potentially punishing.

With the exception of stage 0 individuals whose internal psychological structure excludes sensitivity to 2nd factor influence, stage 1, 2, 3, and 4 individuals may be generally described as consistently showing either active behavior which often includes leadership components, or passive behavior which includes a pattern of consistently waiting for direction and structure from external sources. In both these patterns the rule systems and norms are those established by others with no input by the stage 1, 2, 3, or 4 individual. He is not self-aware but is capable of reacting quickly to external expectations.

A stage 5 individual whose behavior is clearly multilevel shows highly inconsistent behavior marked by wide swings from apparent reaction to external expectations to 3rd factor reciprocal action. He is self-aware and sensitive to his inconsistent behavior. He wants to stablize his behavior at stage 5 but often perceives internal and external impediments to consistent functioning at stage 5. To postpone taking consistent, autonomous responsibility for self-definition and development, this person develops compensatory behaviors that serve to maintain the behavioral ambivalence indicative of multilevel functioning.

As time passes and assuming that positive competence producing experiences are internalized by the self-aware individual, stage 5 functioning may become

more consistent which indicates that lower stage behavioral structure is continuing to disintegrate. The individual's behavior pattern begins to show a consistent questioning orientation toward himself and his environment. This individual is highly sensitive to a feeling of control over himself in his interactions with the environment. He sees himself capable of choosing his own goals or reciprically negotiating for dyadic or group goals, and in all instances committing himself by choice to achieving them. He sees interaction with others as self-initiated. He is capable of teaching and helping others as well as willingly seeking out teaching and help from others whether they are peer, colleague, child or adult.

We have presented a model of self-awareness indicative of an individual's development of capacity for reciprocal interaction and decision making. It is life span in its perspective. Its conceptual framework involves three factors of development. The first represents an individual's biological imperative to seek competence through his preferred modes of interaction with the environment. The specific modes known as profiles of emotional, imaginational, intellectual, psychomotor, and sensual excitability were described. The second factor, an individual's environments, was presented as the means for facilitating his potentially gaining a positive sense of self-competence and concommitant readiness for stage movement and the eventual interaction with triggering stimuli that may result in the achievement of self-awareness, the primary structure of 3rd factor development. Behavioral patterns indicating achievement or non-achievement of self-awareness and their relationships to stage descriptors were also presented. Psychological growth was depicted as the movement from stage to stage in a non-automatic process representing the incremental development of the capacity for reciprocal interactions and decision making. The earlier the stage in the invariant sequence the more the

individual perceives external sources as powerful and restrictive. The individual's perception may be based upon self and others' authoritative power to control and punish (stage 1), upon a self-serving system of exchanges for need satisfaction (stage 2), upon the satisfaction of group expectations (stage 3 and 4), and/or upon balanced, reciprocal informal and formal social contracting (stage 5). It is at this latter level of psychological achievement that the individual experiences a significant event or set of significant triggering events that result in his achievement of self-awareness and self-knowledge of developing 3rd factor capacity.

Relationship between Theory and Research

Children age 11 and 12 may be expected to generally indicate a range of stage behavior from stage 1 through stage 4 with predominant placement at stage 2 and 3 (Kohlberg, 1969). The purpose of this research is to intervene at a point in the child's life when he/she is potentially ready for movement to higher stages of psychological development. Our interventions are directed at impacting the 1st and 2nd factors of the child's life with the goal of promoting achievement or readiness for achieving 3rd factor self-awareness and accompanying stage 5 functioning. We have predicted a negative correlation between drug abuse and stage development. Our longitudinal work may produce the data to substantiate this hypothesis.

Literature Review in Drug Abuse Education

The much publicized increase in the use of certain classes of drugs has intensified public awareness of various types of drug abuse problems--some longstanding, others of more recent origin. There has been a corresponding widespread increase in reliance upon drug education as a preventive measure. Unfortunately, few educational programs have been effectively evaluated (Horan, 1974, Stuart, 1973). The National Commission on Marijuana and Drug Abuse

(1972) did not report a single evaluation procedure which adequately demonstrated the effects claimed for various programs cited. Even though many states have passed laws requiring drug education in the public schools, few have required evaluation, and these tend to be concerned solely with paper-and-pencil measures of drug knowledge. However, as Kitzinger (1970) has pointed out, a drug education program is successful only if it reduces the incidence of drug abuse in the population toward which it is directed. Therefore, some form of behavioral evaluation on a continuing basis should be built into every drug education program.

The work of Stuart (1973), Stuart and Schuman (1972), and Macro Systems, Inc. (1972) suggests that current drug education programs have not prevented drug abuse. Horan (1974) states that the purposes of drug education programs are beset with problems of vagueness. These authors have found a positive correlation between drug abuse and drug information scores. Stuart suggests that drug education may encourage drug experimentation. Horan states that current models have no purpose other than control, which has failed.

Richards (1970) and Nowlis (1970), have pointed out both the popularity and the inadequacy of informational approaches in drug education and have suggested that peer influence may offer a means to achieve more successful results. Cole (1970) states that drug use has expanded through a process of "peer group contagion." A simulation of that process may be the most expedient route for altering drug behaviors.

Kitzinger (1970), and Deitch and Jaffe (1970) contend that drug education efforts directed toward a population that already has a high percentage of drug users are doomed to failure. A preventive approach must be initiated at an earlier age before the onset of widespread abuse. Kitzinger favors a decision-making model in the elementary grades, and reports preliminary data

suggesting the efficacy of this approach. This present research using a stage model of growth and development is assumed to offer a solid basis for providing children with decision-making capacity.

This research focuses on the effects of a broad gauge intervention program designed to impact psychological development directly and hopefully drug related behaviors indirectly. This approach is consistent with the available data from present research in the field. The intervention program includes teacher facilitated peer-group dilemma discussions, a non-score factual "drug education and discovery of self" curriculum, control of group size for teaching and discussion purposes, and presentation of a parallel education program to the children's parents. The unique contribution of this research may be the statistical verification of relationships between stage of psychological development and a subject's future drug-related behaviors.

Research Design

In this section, the design of the research is presented. Following is a description of the experimental and control drug education curricula and conditions, subjects, and methods of evaluation. The research is being conducted in a predominantly white, middle-class, suburban community. The student subjects, all sixth graders in the district, are housed in two middle schools (grades 6-8).

Treatment Conditions

There are four variations in the experimental condition, and one standard control condition. The control condition consists of a standard curriculum published by the Creative Learning Group, a division of the Media Engineering Corporation of Cambridge, Massachusetts (1970). This curriculum includes student's booklets, tape recordings of interviews with drug users, a "smoking machine", dittos of drug-related stories designed for class discussion, and a

teacher's guide with explicit instructions about lesson plans, vocabulary, suggested questions, topics for discussion, and recommendations concerning teaching methods. Two teachers (one at each school) are responsible for this instruction; each takes one class period (approximately 45 minutes) per week for drug education for each of his/her classes.

The experimental condition curriculum consists of content and process components. The materials used to teach the content include selected books and materials about drugs and a detailed curriculum guide for teachers which was developed by the project team which included 6th grade teachers in the school district, three graduate students from the University of Minnesota, and the primary investigator.

In the guide, content instruction is divided into six concept units.

I. Drugs: Yesterday and Today--a listing of the sources of various drugs and facts concerning the use of drugs throughout human history.

II. Drug Effects on Body Systems--a description of body systems; an introduction to basic neuro-pharmacology; and a classification of drugs according to their effects on body systems.

III. Psychological and Sociological Factors Influencing Drug Decisions--a discussion of personality needs, family problems, social pressures, and environmental stresses that can lead a person to use and abuse drugs; an introduction to the traditional and ritual uses of drugs in various cultures.

IV. Drug Misuse--a discussion of the physiological, psychological, and sociological consequences of drug abuse.

V. Legal Implications of Drug Use--a discussion of the concept of law and its function in society and the relationship of laws to drug use; an introduction to the variation in drug use and abuse laws in the various states (U.S.A.) and in foreign countries.

VI. Natural, Non-Drug "Highs"--Discussion of the concept of being "high" and its benefits. [Each student is encouraged to discover various ways in which he/she gets "high", whether naturally or not, and to discuss the positive and negative aspects of each. An important part of this unit is the presentation of the model of "Preferred Modes of Interaction--five forms of heightened

excitability " (Briskin, 1974). This model in part developed by the primary investigator describes five modes of experiencing and functioning in the world, called excitabilities. A person demonstrates a particular excitability when, in interacting with the environment, he/she responds to specific stimuli with exaggerated excitement and/or quiet, intense concentration, persistence, patience, consistency, and noticeable enjoyment. This enjoyment may be expressed verbally or non-verbally. The five excitability dimensions are: emotional, psychomotor, sensual, imaginational, and intellectual. Students are helped to discover their own excitability profile, in order to increase their ability to create and achieve their own "natural" highs.]

Specifically, the experimental curriculum guide includes a statement of the basic concepts to be discussed, a section on teacher background materials, student worksheets, and suggestions of activities. Also included in the curriculum guide are drug thematic dilemma stories used as stimulus material for the dilemma groups and communication "games" used to facilitate the change in communication format from the uni-directional style of the typical classroom setting to a less directive style more suitable to the dilemma group discussions.

In the process component of the experimental curriculum condition, students participate in drug-theme dilemma group discussions. Students are encouraged to place themselves in the position of the main character of the story in order to face and decide what they would personally do in a similar situation. More important than what the student would do is his/her reason for choosing the particular course of action. As students present various reasons for their actions, they reveal their stage of development to the facilitator, who attempts to involve them in interaction with other students thought to be at higher levels of development. This process is known as "anticipatory socialization" or "plus-oneing". According to theory, a person operating predominantly at "stage one" cannot understand a response at "stage three or four;" but a response at the next highest level can be grasped, and may begin to appeal to the person, because it seems a more "efficient and

internally satisfying" way of making decisions. The presentation of a "plus one" response may then facilitate the process of growth to that stage of development. Therefore, it is the facilitator's function to see that each student has an opportunity within the dilemma group to deal with responses at one level higher than his/her predominant stage of development. This can be accomplished by involving students in interaction with each other, as mentioned above or the facilitator may present a "plus one" response to the student.

Within the experimental curricular process, two format comparisons are being made:

Large group vs. small group

Content and dilemma group vs content only

The large group format has been assigned to middle school #2, while the small group format has been assigned to middle school #1. Classes in both schools have been assigned either content and dilemma group process or content only. The difference is that in school #2 the investigation is of class size groups of approximately 27, while in school #1 investigation is of small size groups of approximately 9. In content and dilemma group conditions, content is presented one week, while dilemma group discussions occur in alternate weeks. In the content only condition, curricular content is presented each week with group discussions focused on the material. In Figure 1 the experimental and control conditions are presented.

Figure 1

Middle School #1	Middle school #2
Experimental Condition 1A: Content + dilemma, small groups. 5 Teachers. 189 Students, in groups of 9.	Experimental Condition 2A: Content + dilemma, large groups. 2 Teachers. 108 Students, in groups of 27.
Experimental Condition 1B: Content only, small groups. 3 Teachers. 81 Students, in groups of 9.	Experimental Condition 2B: Content only, large groups. 2 Teachers. 108 Students, in groups of 27.
Control Condition: Published curriculum. 1 Teacher. 162 Students, in groups of 27.	Control Condition: Published curriculum. 1 Teacher. 54 Students, in groups of 27.

Subjects

Subjects in this research are all the sixth grade students in Independent School District #196, Rosemount, Minnesota. There are 702 students equally representative of males and females. They are housed at two schools participating in the daytime program. At school #1 there are 16 classes averaging 27 students each, totaling 432 students. At school #2 there are 10 classes averaging 27 students each, totaling 270 students.

There are approximately 125 parents representing 80 family units participating in the evening program, about half from each school.

The population in this district is basically white, middle class suburban. Middle school #2 is located in Rosemount, Minnesota. Its families may be characterized as well established, with a mix of long time town residents and members from a stable farm population. Town people operate their own business or work for local concerns. Middle school #1 is located in Apple Valley, Minnesota, a relatively new suburban community about 10 miles from Rosemount. Its families may be characterized as newly established and more transient. Parents generally work for one of the many large national concerns situated in the Minneapolis-St. Paul metropolitan area.

Methods of Evaluation

In pre-test procedures each subject completed two written surveys: 1) a 40-item multiple choice drug information survey and 2) a "Who Am I?" survey (Long, 1973). In the first survey half of the questions were drawn from the experimental and half from the control curriculum. The survey instructions and each question were read aloud to prevent reading skill bias. The "Who Am I?" survey is a measure of childrens' self-assessment. The survey is an objective identification of some of the possible parameters of the self. Long (1973) states that "accurate and realistic perception of the self seems to

be something that goes along with maturity of ego development and coping skills; just as much as realistic assessment of external reality." (p. 118) The scoring procedures include rating each response on a four category scale, ranging from superficial descriptions of self in terms of appearances and activities on through to descriptions of the self in terms of personality description and feelings, dynamics, and revealing behavior. Each student was instructed to write down words, phrases, and/or sentences which he/she thought best described themselves and answered the question "who am I?".

In addition to the two survey procedures, a random sample of nine students from each of the 26 classes were drawn to take part in a tape recorded "dilemma group" discussion. A drug-thematic story was presented by a facilitator who used the "psychological stage"development paradigm as a tool to evaluate student stage of development. Subsequently, one student was selected at random from each group of nine. These students were interveiwed individually using a different drug-theme dilemma. In addition the student recorded oral responses to the "Who Am I?" survey.

To determine group and facilitator consistency, each pretestor recorded two of the previous groups of nine a second time using a different drug-theme dilemma. At the close of the academic year (June 1975) equivalent post-test measures and procedures will be administered.

An important additional dimension in this research is the investigation of the impact of parental involvement in a parallel evening course in drug education on their child's learning and psychological growth as operationally defined. Accordingly, students whose parents attended the initial evening session were tested again for psychological stage of development. They were tested in groups of four, because that is the maximum number allowing raters to identify individual student responses from the tapes. Those students whose

parents withdraw from the evening program will not be post-tested. As a control, five groups of 4-students each whose parents did not attend the evening program were pre-tested and will be post-tested similarly.

The parents completed a number of evaluation procedures as well. They completed the same forty-item drug information survey administered to the children. In addition they completed the "Who Is My Child?" survey which is a modification of the "Who Am I?" instrument. Parents were asked to write down as many words, phrases, and/or sentences best describing their child. Rating procedures are similiar to those for the "Who Am I?" survey data.

In order to assess parents' stage of psychological-moral development, the Defining Issues Test (Rest, 1974) was administered. The test is an objective written alternative to data collection in a dilemma group format. The parent-subject reads the several dilemma stories and then rates presented responses for their importance to him/her. This rank ordering of responses is the basis for stage evaluation.

Following post-testing all data will be coded and given to three trained raters for evaluation. Blind rating procedures will be used in all instances. Rater training will include tape analysis using the psychological stage paradigm and response analysis of data from both the "Who Am I?" and "Who Is My Child?" surveys.

A long range follow-up study is planned to study the relationships between program effects and various stage of development variables to subsequent drug use patterns. These data will be collected when the students are in the ninth grade. Data will be gathered in a way to insure complete confidentiality. The difficulties in securing this information are substantial but in the absence of such data, further developments in drug education will continue to be based solely on hypothesis.

Teacher Training

Prior to the intervention period itself, teachers completed training sessions appropriate to the experimental condition in which they participated. Four teachers, and two project staff assistants, took part in two four-hour sessions. The training curriculum covered reviewing basic communication skills, facilitating dilemma discussion groups, and teaching the "excitability" model. These same teachers, plus two more who were assigned to experimental condition B (content only), participated in another two sessions dealing with the drug-concept areas included in the experimental curriculum. The two teachers in the control condition (creative Learning Group) completed separate two-hour training sessions designed to familiarize them with the materials, lesson plans, and communication skill units.

A four hour mid-term workshop is planned to provide the opportunity for technical modifications in procedure, planning for activities, and review of teaching techniques. In addition, an evaluation workshop will be held at the close of the intervention period.

Research Project Staff

The research team includes the primary investigator, a full-time project director, two half-time research associates, and two additional parent evening dilemma group facilitators.

Statement of Hypotheses

In applying a stage development model to elementary school drug education, we draw on several key assumptions:

a. Higher stage development operationally means more adequate social-emotional-cognitive functioning.

b. More adequate or complex cognitive structuring provides the individual with the capacity to accommodate a wider spectrum of his environment and to exercise more adequate decision-making in regulating present and future drug use.

The basic assumption of the theory is that movement up the developmental ladder occurs through effective interaction of the individual with his environment. Progress is not necessarily steady and may accelerate, slow down, or actually stop, depending on the quality of the interaction. Movement through developmental stages involves basic transformations of mental structure.

Stages imply distinct qualitative differences in modes of thinking and feeling about and solving problems. Piagetian theory indicates that sixth grade students are completing the concrete-operational period of development and moving into the formal-operational stage. Intervention at this crucial time can be expected to facilitate students' growth to higher stages of development. It is hypothesized, therefore, that higher stage development, representing more adequate developmental functioning and decision-making, is positively related to self-controlled choice-making in regulating drug use and avoiding drug abuse. In contrast, it is hypothesized that lower stage development, reflecting less adequate developmental functioning and decision-making, is positively related to responsiveness to group pressure to use and abuse drugs, and negatively related to self-controlled decision-making in this area.

Research Hypotheses

1. Because we assume that movement to higher stages of psychological development is a factor involved in personal growth, and because we also assume that higher stage achievement is indicative of more adequate decision-making capacity, we hypothesize that students who have achieved higher stage development will choose to regulate drug use, avoiding drug abuse.

2. Because we assume that psychological development is not automatic, but rather requires a facilitative interaction between an individual and his environments, we hypothesize that if our broad gauge intervention can facilitate stage development, then it will correspondingly have a long term effect on drug use patterns.
3. There will be no dependent variable score differences among students who participate in any of the experimental curriculum conditions which include either small group dilemma discussions and content presentation, small group content presentation only, large group dilemma discussions and content presentation, or large group content presentation only.
4. There will be no dependent variable score differences between students participating in any of the four experimental conditions and students participating in the control curriculum prepared by a national publishing company.
5. Because we assume that childhood is a period of readiness for achieving higher stages of psychological development and self-awareness, we hypothesize that our intervention program will show greater effect on pre-post-test change scores on the "Who Am I?" survey which rates self-insight development than on the 6 stage psychological development scale.
6. Because we assume that parental interest in their child's experiences may have a greater impact on his/her development than a school based curriculum alone, we hypothesize that parent involvement in the evening parent program regardless of the daytime condition in which the child participates will result in higher student scores on three dependent variable measures (Drug information survey, "Who Am I" scale, and rating of stage of psychological development) than students of parents who were not involved in the evening program.

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